

# MANGY MOOSE CAFE (PWSNO 1090201) SOURCE WATER ASSESSMENT REPORT

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December 17, 2002



## State of Idaho Department of Environmental Quality

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## SOURCE WATER ASSESSMENT FOR MANGY MOOSE CAFE

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your drinking water source is based on well construction characteristics; site specific sensitivity factors associated with the aquifer the water is drawn from; a land use inventory inside the well recharge zone; and water quality history. For non-community transient water systems like Mangy Moose Cafe, recharge zones were generally delineated as a 1000-foot fixed radius around the wells.

This report, *Source Water Assessment for Mangy Moose Cafe* describes factors used to assess the well's susceptibility to contamination. The analysis relies on information from the well log; an inventory of land use, well site characteristics, potential contaminant sites identified through a Geographic Information System database search; and information from the public water system file. The ground water susceptibility analysis worksheet for Mangy Moose Cafe is attached.

Taken into account with local knowledge and concerns, this assessment should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

**Well Construction.** The Mangy Moose Cafe well provides drinking water for a restaurant, two homes and 10 RV spaces about 2 miles west of Priest River, Idaho. The well log is not on file with DEQ and was not found in a search of Idaho Department of Water Resources records, so many factors used to assess vulnerability to contamination are not known. The well is reported to be 260 feet deep. It has a 6-inch steel casing that extends 19 inches above grade and is fitted with a watertight, vented well cap.

**Well Site Characteristics.** Hydrologic sensitivity scores are derived from information on the well log and from the soil drainage classification inside the recharge zones delineated for your well. Soils in the well recharge zone are generally moderately to well drained. Well-drained soils provide little protection against migration of contaminants toward the well. The soil structure above the water table at the well site is not known because the well log is unavailable.

**Potential Contaminant Inventory.** The septic tank for the restaurant, about 60 feet east of the well, is closer than allowed under *Idaho Rules for Public Drinking Water Systems*. State Highway 2 and a rail line cross the 1000-foot buffer zone delineated as the well recharge zone for Mangy Moose Cafe. Major transportation corridors can be sources of all classes of regulated contaminants. The septic system for a nearby motel and RV park is about 250 feet north west of the well. Contaminants of concern associated with large septic systems include inorganic chemicals such as nitrate, and microbial contaminants like bacteria and viruses. A site inspection on March 2000 determined that the waters of the Pend Oreille River do not directly influence the well, so surface water was not counted as a significant potential contaminant source in this analysis.

**Water Quality History.** Mangy Moose Cafe, under regulation as a non-community transient public water system, is required to monitor quarterly for total coliform bacteria contamination. In the period from December 1993 through November 2001 only one quarterly sample was positive. The presence of total coliform bacteria was not confirmed in follow up testing. Annual nitrate samples collected between 1994 and 2001 show concentration ranging between 0.076 and 0.12 mg/l. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l.

**Susceptibility to Contamination.** An analysis of the Mangy Moose Cafe well, incorporating information from the public water system file and the potential contaminant inventory, ranked the well highly susceptible to inorganic chemical and microbial contamination because of the septic tank located within 100 feet of the well. The well is moderately susceptible to synthetic and volatile organic chemical contamination. Most of the points marked against the well relate to natural risk factors that are unknown because the well log is not available. The susceptibility analysis worksheet for your well on page 6 this report shows how your well was scored. Formulas used to compute the final susceptibility scores are at the bottom of the worksheet.

**Source Water Protection.** This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For Mangy Moose Cafe drinking water protection activities should focus on bringing the water system into full compliance with *Idaho Rules for Public Drinking Water Systems*. The septic tank 60 feet from the well needs to be moved to an approved location. While no deficiencies were noted in maintenance of the well head, the 2000 sanitary survey reported that the pump room door needed to be replaced to prevent unauthorized access, and the pump room needed to be cleaned. Preventing contamination of an existing well is far more cost effective than having to replace a source damaged through neglect.

With the well located only 10 feet from the property line, Mangy Moose café does not have control over the sensitive area closest to the well so it will be important to form partnerships with neighbors to regulate activities that can degrade ground water quality. It might be helpful for the café to investigate a ground water protection program like Home\*A\*Syst. These programs are designed to help well owners assess everyday activities for their potential impact on drinking water quality. Topics include septic tank management, petroleum product storage, handling and storing lawn and household chemicals and similar activities.

Every system should have an emergency response plan. There is a simple fill-in-the-blanks form available on the DEQ website (<http://www.state.id.us/deq/water/water1.htm>) to guide systems through the emergency planning process.

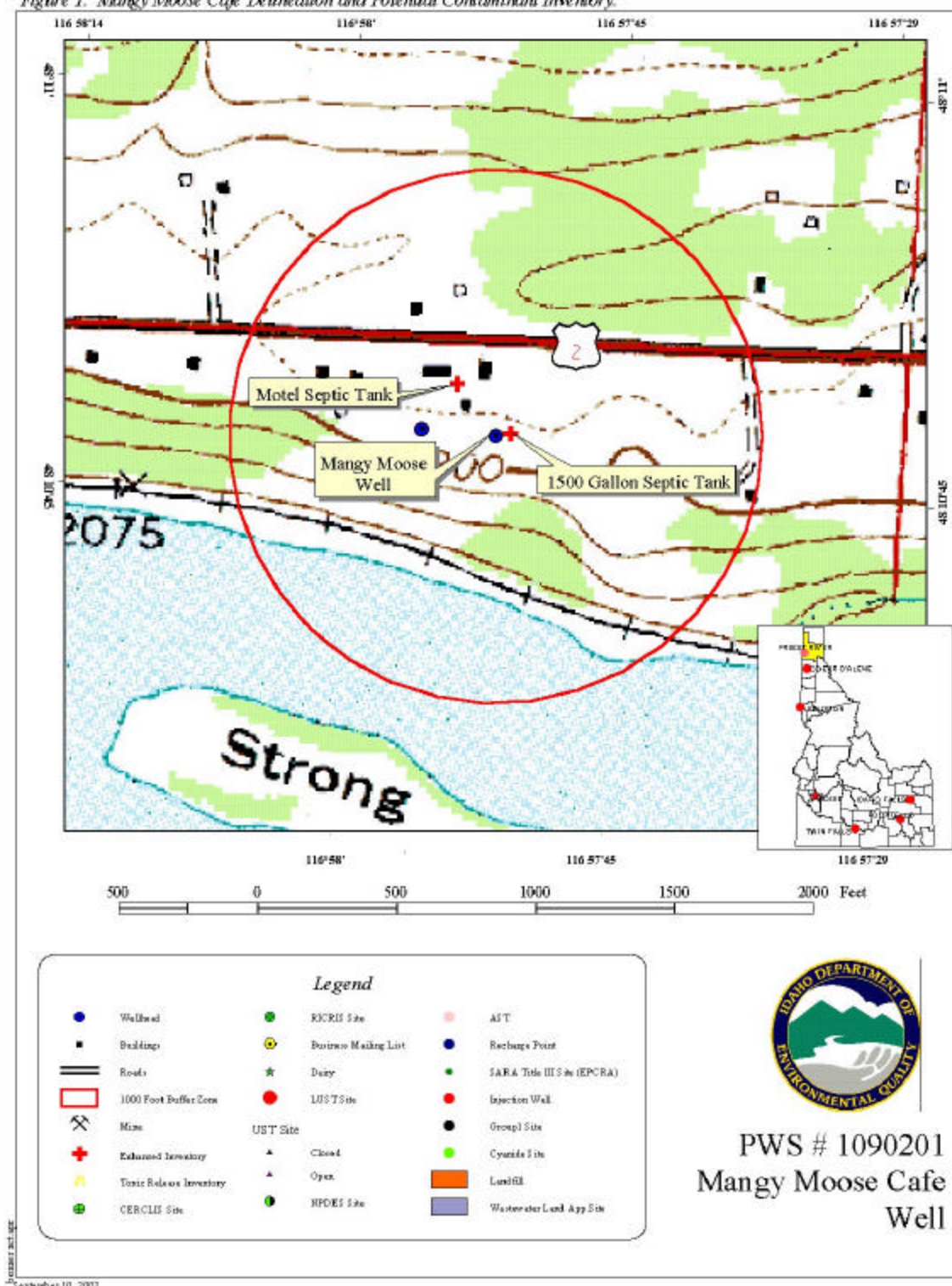
**Assistance.** Public water suppliers and users may call the following IDEQ offices with questions about this assessment and for help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: <http://www.deq.state.id.us/water/water1.htm>

Figure 1. Mangy Moose Cafe Delineation and Potential Contaminant Inventory.



**Ground Water Susceptibility**

Public Water System Name :

**MANGY MOOSE CAFE**

Well :

**WELL**

Public Water System Number :

**1090201**

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<b>1. System Construction</b>		<b>SCORE</b>			
Drill Date	UNKNOWN				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES 2000				
Well meets IDWR construction standards	UNKNOWN	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	UNKNOWN	2			
Highest production 100 feet below static water level	UNKNOWN	1			
Well located outside the 100 year flood plain	YES	0			
<b>Total System Construction Score</b>		<b>4</b>			
<b>2. Hydrologic Sensitivity</b>					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	UNKNOWN	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	UNKNOWN	2			
<b>Total Hydrologic Score</b>		<b>6</b>			
<b>3. Potential Contaminant / Land Use</b>		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Close to Well	URBAN/COMMERCIAL	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	YES Septic Tank	YES	NO	NO	YES
<b>Total Potential Contaminant Source/Land Use Score - Close to Well</b>		<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Potential Contaminant / Land Use - 1000-FOOT BUFFER ZONE</b>					
Contaminant sources present (Number of Sources)	YES	2	1	1	2
(Score = # Sources X 2 ) 8 Points Maximum		4	2	2	4
Sources of Class II or III leacheable contaminants or Microbials	YES	2	1	1	
4 Points Maximum		2	1	1	
1000-Foot Buffer Zone contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Buffer Zone	25 to 50% Agricultural Land	2	2	2	2
<b>Total Potential Contaminant Source / Land Use Score - 1000-Foot Buffer Zone</b>		<b>8</b>	<b>5</b>	<b>5</b>	<b>6</b>
<b>Cumulative Potential Contaminant / Land Use Score</b>		<b>10</b>	<b>7</b>	<b>7</b>	<b>8</b>
<b>4. Final Susceptibility Source Score</b>		<b>13</b>	<b>12</b>	<b>12</b>	<b>13</b>
<b>5. Final Well Ranking</b>		*High	Moderate	Moderate	*High

Automatically ranked highly susceptible due to presence of septic tank within 100 feet of well.

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

**Final Susceptibility Ranking:**

- 0 - 5 Low Susceptibility
- 6 - 12 Moderate Susceptibility
- > 13 High Susceptibility

## POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

**AST (Aboveground Storage Tanks)** – Sites with aboveground storage tanks.

**Business Mailing List** – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

**CERCLIS** – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

**Cyanide Site** – DEQ permitted and known historical sites/facilities using cyanide.

**Dairy** – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

**Deep Injection Well** – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

**Enhanced Inventory** – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

**Floodplain** – This is a coverage of the 100year floodplains.

**Group 1 Sites** – These are sites that show elevated levels of contaminants and are not within the priority one areas.

**Inorganic Priority Area** – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

**Landfill** – Areas of open and closed municipal and non-municipal landfills.

**LUST (Leaking Underground Storage Tank)** – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

**Mines and Quarries** – Mines and quarries permitted through the Idaho Department of Lands.)

**Nitrate Priority Area** – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

**NPDES (National Pollutant Discharge Elimination System)** – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

**Organic Priority Areas** – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

**Recharge Point** – This includes active, proposed, and possible recharge sites on the Snake River Plain.

**RICRIS** – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

**SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities)** – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

**Toxic Release Inventory (TRI)** – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

**UST (Underground Storage Tank)** – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

**Wastewater Land Applications Sites** – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

**Wellheads** – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

**NOTE:** Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.